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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of Part 25 of the Commission's	)	
Rules to Establish Rules and Policies	)	
Pertaining to the Second Processing Round	)	IB Docket No. 96-220
of the Non-Voice, Non-Geostationary Mobile	)	
Satellite Service	)	

REPLY COMMENTS OF

LEO ONE USA CORPORATION

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EXECUTIVE SUMMARY

In these reply comments, Leo One USA demonstrates that the public interest will best be served if the Commission promptly licenses new competitive Non-Voice, Non-Geostationary Mobile Satellite Service ("NVNG MSS") providers capable of offering near real-time services. This goal can be accomplished only if the Federal Communications Commission ("FCC" or "Commission") awards second round licenses to new entrants and reorganizes the available spectrum to allow for the introduction of systems capable of providing near real-time services.

In order to bring this proceeding to a successful conclusion, however, the Commission must make a finding on four issues. First, the Commission must determine whether the markets to be served by NVNG MSS operators will be competitive if limited to only the first round licensees. If they are not, the public interest will be advanced only if the Commission adopts its proposed rules to limit the existing licensees' eligibility to participate in the second NVNG MSS processing round. Second, although the comments demonstrate a consensus that the Commission should license new systems capable of providing near real-time services, the Commission must determine whether the available NVNG MSS spectrum can technically support the introduction of new, near real-time

systems. As Leo One USA demonstrates in its initial comments and in these reply comments, new licensees operating in the existing bands time-sharing with the National Oceanic and Atmosphere Administration ("NOAA") and the Defense Meteorological System Program ("DMSP") Meteorological Satellite ("METSAT") systems would be technically capable of providing near real-time services in an economically efficient manner. Third, the Commission must decide whether to use eligibility criteria as a means to eliminate mutual exclusivity. The prompt introduction of new competitive NVNG MSS service providers can be realized only if the Commission promptly grants licenses to those applicants that have demonstrated the financial capability to immediately implement their entire proposed systems. Finally, the Commission must determine the structure of the band plan for new NVNG MSS systems.

All the commenting parties agree that the public would best be served if it had a variety of sources for obtaining NVNG MSS services. The critical question for the Commission is whether alternatives exist today to the commercial services that will be provided by Orbcomm and GE Starsys. There is general agreement among the existing licensees and the second round applicants that NVNG MSS systems will serve a variety of consumer requirements. Each of the parties concurs with Leo One USA's view that service offerings of NVNG MSS operators can be distinguished by response time of service. Some customer requirements can be accommodated by intermittent service while others can be accommodated only by near real-time services. Moreover, in order for an NVNG MSS service provider to be successful, service must be offered on a global basis.

In these reply comments, Leo One USA demonstrates that terrestrial wireless, Big LEOs, geostationary satellites and foreign NVNG MSS systems will not have an appreciable impact on the competitive structure of the NVNG MSS industry. Many of the market segments that could be

served by NVNG MSS operators will remain unserved if the Commission fails to license new competitive NVNG MSS systems capable of providing near real-time services. Other market segments will be served by only one or two suppliers. This type of non-competitive market structure will not serve the public interest in the United States.

The grant of the Orbital Communications Corporation ("Orbcomm") modification request would make it impossible to license a new NVNG MSS system in the 137 - 138 MHz band capable of providing near real-time services. Likewise, grant of the Global Positioning, Inc. ("GE Starsys") modification will prevent introduction of new NVNG MSS systems. It is hard to understand how U.S. consumers would be better served by the grant of the Orbcomm modification than by the licensing of new NVNG MSS systems. It is extremely difficult to make a case that the public interest would be better served by Orbcomm's improved service to northern latitudes when the result is eliminating tremendous consumer benefits for the rest of the country from the introduction of new competition.

The net economic benefit to the U.S. economy resulting from grant of the Orbcomm or GE Starsys modification requests pale when compared to economic benefits associated with new NVNG MSS systems. If the Commission were to license two or three new systems, it would result in construction of close to 100 new satellites. The U.S. is the world leader in small satellite design and construction, and, therefore, U.S. industry would likely benefit from these new systems. Additionally, U.S. launch providers, as well as subscriber equipment manufacturers, would directly benefit from these new systems. Finally, any new licensee would have to establish operational, technical and marketing staffs, all of which would translate into new jobs for American citizens. The same cannot be said if the Orbcomm or GE Starsys modification requests are granted. Add to this

the benefits associated with the introduction of new competitive NVNG MSS systems, and it is hard to make a public interest case in favor of granting the Orbcomm or GE Starsys modifications.

Leo One USA refutes the Orbcomm/GE Starsys claim that the Commission would engage in impermissible retroactive rulemaking if it were to adopt rules revising the eligibility criteria for NVNG MSS licenses in the second round processing group. Orbcomm's argument is flawed because it assumes the Commission's proposed rule is retroactive. However, a rule is retroactive only if it "takes away or impairs vested rights acquired under existing laws, or creates a new obligation, imposes a new duty, or attaches a new disability, in respect to transactions or considerations already past."[1] A statute or rule is not retroactive merely because it draws upon antecedent facts for its operation. Although the rules proposed by the Commission may consider some antecedent facts (i.e. whether an applicant currently holds a license for NVNG MSS service) in determining future eligibility for a license, the rule is not retroactive because it does not affect a vested right of any of the applicants. The presumption against retroactive rulemaking is grounded and based on a respect for vested rights. However, in this case no vested rights are affected by the Commission's proposed new rules. No applicant has a vested right to a second round license. Moreover, no applicant has a vested right to a hearing on its application unless it is qualified to hold the license by meeting all the Commission's eligibility requirements.

As Leo One USA notes in its Comments, there are two critical elements necessary to support the Commission's public policy goal of enhancing competition, lowering prices and increasing services options for customers. First, the Commission will need to issue licenses for systems that

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[1] *Landgraf v. USI Film Products,* 511 U.S. 244, 269 (1994) (quoting *Society for the Propagation of the Gospel v. Wheeler,* 22 F. Cas. 756, 767 (No. 13, 56) (CC NH 1814).

are capable of providing near real-time services. Second, the new licensee must have the capability to offer service on a global basis. Leo One USA supports the comments that conclude the public interest will best be served by the licensing of new NVNG MSS systems capable of offering near real-time services. Leo One USA's technical analyses demonstrate that near real-time services can be achieved when time-sharing in either the Volunteers in Technical Assistance, Inc. ("VITA") and DMSP paired spectrum or the NOAA spectrum and has proposed a specific channel plan that optimizes the use of the available spectrum.

Leo One USA agrees with many of the comments that auctions should be avoided if there is any practical means to do so. The use of strict eligibility and financial qualifications may eliminate mutual exclusivity and allow this proceeding to be resolved. The Commission should immediately dismiss the applications of Orbcomm, GE Starsys, VITA and GE Americom. The application of FACS should be dismissed as a result of its parent's affiliation with VITA.

There is agreement in the comments that the Commercial Systems, Inc., E-SAT, Inc. ("E-SAT"), Final Analysis Communications Services, Inc. ("FACS") and Leo One USA systems as proposed cannot all be accommodated in the existing bands. No one has proposed any band plan that can accommodate three large systems and E-SAT's CDMA system. Even in the case of E-SAT, it is impossible to state there is an absence of mutual exclusivity. E-SAT's coordination with the existing licensees could impact the coordination of the other second round systems with those licensees, preventing grant of all the applications. Specifically, there are not enough available downlink channels to enable the provision of three systems capable of providing near real-time services. In this situation, the FCC's failure to impose strict financial qualification standards would be an abrupt departure from existing precedent and would permit underfinanced entities to preclude

implementation of well financed systems, thus preventing the implementation of a new, near real-time system. As Leo One USA has demonstrated repeatedly, this would not serve the public interest.

The Communications Act requires the Commission to consider threshold qualifications as a tool to avoid mutual exclusivity. In the Big LEO proceeding, the Commission used threshold qualifications, requiring all Big LEO applicants to demonstrate the financial qualifications to construct, launch and operate the *entire* satellite system. As in the Big LEO proceeding, the Commission is obliged by Congress to use the strict Domsat financial qualifications standard to avoid mutual exclusivity for the NVNG MSS. A review of the Commission's experience with liberal financial qualification standards demonstrates that they do not work. There is nothing unique to the NVNG MSS that provides the Commission with any basis to conclude that liberal financial qualifications would work here.

Although Leo One USA believes that the Commission should seek engineering solutions as means to avoid mutual exclusivity, it does not believe it is technically possible to accommodate more than two near real-time systems. In light of this fact, it will not be possible to license near real-time systems if the spectrum is divided among three applicants. Consequently, Leo One USA, in its comments, proposed that the Commission license two new NVNG MSS systems -- Little LEO Systems A and B. These systems would be capable of offering near real-time services.

In order to determine whether mutual exclusivity can be resolved, Leo One USA suggests that the Commission undertake the following actions. First, the Commission should adopt the band plan proposed in its comments. Second, it should dismiss the applications of the first round licensees and those applicants affiliated with first round licensees. Third, the remaining applicants should be required 30 days after the release of the Report and Order that adopts new rules for the

NVNG MSS to amend their applications to conform to the new rules including the new financial qualification rules. Fourth, the Commission should review the financial qualifications of each of the applicants and immediately dismiss or defer the applications of unqualified applicants. Fifth, if more than one qualified applicant seeks to operate in the same band, the Commission should auction the band. This approach can reduce conflicts among the applicants and should resolve mutual exclusivity.

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Leo One USA Corporation, ("Leo One USA"), by its attorneys, hereby files these reply comments in the above-captioned proceeding. In these reply comments, Leo One USA demonstrates that the public interest will best be served if the Commission promptly licenses new competitive Non-Voice, Non-Geostationary Mobile Satellite Service ("NVNG MSS") providers capable of offering near real-time services. This goal can be accomplished only if the Federal Communications Commission ("FCC" or "Commission") awards second round licenses to new entrants and reorganizes the available spectrum to allow for the introduction of systems capable of providing near real-time services.

I. INTRODUCTION

For several years, the Commission and the NVNG MSS industry have been looking for an opportunity to introduce competitive NVNG MSS services for the benefit of the public. The release

of the Notice of Proposed Rule Making ("Notice")[1] in this proceeding was a significant step toward fulfilling this goal. The Commission's proposal in the Notice to adopt innovative time-sharing techniques and policies on applicant eligibility will enable the prompt introduction of new competitive NVNG MSS systems.

In order to bring this proceeding to a successful conclusion, however, the Commission must make a finding on four issues. First, the Commission must determine whether the markets to be served by NVNG MSS operators will be competitive if limited to only the first round licensees. If they are not, the public interest will be advanced only if the Commission adopts its proposed rules to limit the existing licensees' eligibility to participate in the second NVNG MSS processing round. The existing licensees, Orbital Communications Corporation ("Orbcomm") and GE Starsys Global Positioning Inc. ("GE Starsys"), argue that sufficient competition exists in markets served by existing NVNG MSS licensees; the second round applicants recognize that the markets that could be served by NVNG MSS operators will be unserved entirely or characterized by one or two service suppliers unless new entrants are licensed.[2] As is demonstrated below, neither Orbcomm nor GE Starsys has made a case that there are adequate substitutes for NVNG MSS services. Consequently, their position that the Commission should assign additional spectrum to first round licensees must be rejected.

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1 *Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service*, IB Docket No. 96-220, *Notice of Proposed Rulemaking* (Oct. 29, 1996).

2 Although the Notice assumes there will be three competitors from the first round licensees serving the needs of consumers, (*see, e.g.,* Notice at para. 33), the Volunteers in Technical Assistance, Inc. ("VITA") clarifies that it will *not* serve commercial NVNG MSS needs and that VITA's system is not a substitute for that of Orbcomm or GE Starsys (Comments of VITA at 3). Thus, any analysis of the competitive environment for commercial NVNG MSS services must assume at best a duopoly, absent the introduction of new competitors.

Second, although the comments demonstrate a consensus that the Commission should license new systems capable of providing near real-time services, the Commission must determine whether the available NVNG MSS spectrum can technically support the introduction of new, near real-time systems. Leo One USA and CTA Commercial Systems, Inc. ("CTA"), in their comments, conclude that new systems offering near real-time services could be licensed in the currently allocated NVNG MSS spectrum. Final Analysis Communications Services, Inc. ("FACS") disagrees with this conclusion. As Leo One USA demonstrates in its initial comments and in these reply comments, new licensees operating in the existing bands time-sharing with the National Oceanic and Atmosphere Administration ("NOAA") and the Defense Meteorological System Program ("DMSP") Meteorological Satellite ("METSAT") systems would be technically capable of providing near real-time services in an economically efficient manner. The FACS analysis on this topic is incomplete and does not fully address the means for mitigating the level of outages associated with time-sharing with DMSP or NOAA METSATS.

Third, the Commission must decide whether to use eligibility criteria as a means to eliminate mutual exclusivity. Specifically, there is disagreement whether the Commission should require the applicants to demonstrate the financial capability to construct, launch and operate for one year an *entire* satellite system.[3] Leo One USA stated in its comments that because mutual exclusivity exists, it is important that under-financed applicants not impede a fully capitalized applicant from bringing new services to the public. Others contend that strict financial qualification standards are

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[3] Leo One USA stated in its comments (Comments of Leo One USA at 40) and continues to believe that the Commission should apply its current financial qualification test to the pending second round applications. In the event that does not resolve mutual exclusivity, Leo One USA supports adoption of the stricter standard.

unnecessary for the NVNG MSS. Leo One USA, CTA, E-SAT, Inc. ("E-SAT") and FACS all agree that the public interest would best be served by the prompt introduction of new competitive NVNG MSS service providers. This goal can be realized only if the Commission promptly grants licenses to those applicants that have demonstrated the financial capability to immediately implement their entire proposed systems. The grant of licenses to under-financed companies is not consistent with this public policy goal.

Finally, the Commission must determine the structure of the band plan for new NVNG MSS systems. Leo One USA and CTA propose band plans that would enable the prompt introduction of new, near real-time systems. FACS and E-SAT, in order to resolve mutual exclusivity, encourage the Commission to divide the available spectrum equally among the four second round applicants[4] creating partial systems. If the FACS/E-SAT approach is accepted, there will never be new systems providing near real-time services in the existing bands. Based on Leo One USA's conclusion that significant market requirements exist for near real-time services and that systems offering these services can be accommodated in the existing bands, the Commission would not be serving the public interest if it decided to license four partial systems as proposed by FACS and E-SAT. While this approach may be administratively convenient for the Commission and serve the interests of some of the applicants,[5] it would not serve the interests of consumers in the United States who would benefit from the introduction of new, competitive near real-time NVNG MSS services.

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4 The term "second round applicants" is used throughout to refer to Leo One USA, CTA, FACS and E-SAT.

5 It should be noted that this approach will allow E-SAT to fully implement its proposed system but severely restrict all the other applicants' business plans. Leo One USA has repeatedly stated that it will not implement a partial system.

As demonstrated below, the consumer will best be served by the introduction of new NVNG MSS systems capable of providing a full array of services, which require near real-time services. In these reply comments, Leo One USA provides detailed support as to what policies will best serve the public interest and enable the Commission to successfully resolve this proceeding.

II. THE EXISTING LICENSEES SHOULD BE DECLARED INELIGIBLE TO PARTICIPATE IN THE SECOND NVNG MSS PROCESSING ROUND

All the commenting parties agree that the public would best be served if it had a variety of sources for obtaining NVNG MSS services. Orbcomm and GE Starsys implicitly recognize this public policy goal in their comments. Specifically, they urge the Commission to reject the proposal in the Notice to exclude existing licensees from the second processing round because consumers already have sufficient choices for obtaining NVNG MSS services.[6] Their arguments rest on the fundamental policy goal that the consumer should have the ability to purchase services from a variety of vendors.[7] All of the second round applicants agree with this proposition. For instance, FACS concludes that "[t]he Little LEO market is not yet competitive and additional entry will result in public benefits across the full range of potential Little LEO applications."[8] CTA agrees when it concludes that "[t]he presence of multiple suppliers will enable the provision of these various services, and indeed will allow for the development of competition in each category of service. Moreover, the licensing of additional suppliers will encourage innovation because suppliers will

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6 Comments of Orbcomm at 27; Comments of GE Starsys at 9-11.

7 Leo One USA simply disagrees with their factual conclusion that competition actually will exist with only two commercial service providers.

8 Comments of FACS at 9.

need to be responsive to consumer demands in order to obtain and keep market share."[9] The critical question for the Commission is whether alternatives exist today to the commercial services that will be provided by Orbcomm and GE Starsys. If the answer to this question is no, comments by all the parties support the argument that the public would best be served by the licensing of new competitive NVNG MSS operators capable of offering consumers the full array of services including the provision of near real-time services.

A. There Are Multiple Markets in Which NVNG MSS Operators Can Offer Service

Leo One USA, in its comments, describes numerous market segments in which an NVNG MSS operator can offer service.[10] There is general agreement among the existing licensees and the second round applicants that NVNG MSS systems will serve a variety of consumer requirements. For instance, Orbcomm concurs with the view that there are numerous markets that could be served by NVNG MSS systems including "worldwide mobile asset tracking; remote industrial monitoring and control applications; environmental data collection; and real time person-to-person and machine-to-machine communications, including two-way Internet e-mail communications and recreational and business messaging."[11] In its comments, FACS concurs with the view that multiple markets can be served by NVNG MSS systems: "Little LEO services will be offered in a wide variety of submarkets spanning a continuum of diverse characteristics, including different polling frequencies (e.g., from intermittent to near real-time), different throughput capabilities, varying market

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9 Comments of CTA at 15.

10 Comments of Leo One USA at App. A, Table 1.

11 Offering Memorandum of Orbcomm Global, L.P. (and) Orbcomm Global Capital Corp., Bear, Stearns & Co., Inc., *et. al.*, Aug. 2, 1996, at 31 ("Orbcomm Offering Memorandum"). Excerpts from the Orbcomm Offering Memorandum appear in Appendix A hereto.

substitutes' different demand and supply elasticities, and in different geographic and demographic conditions."[12] Nothing in any of the comments contradicts the view that there is not one single market for NVNG MSS services but rather that there are multiple markets that will be served by NVNG MSS operators.

Each of the parties concurs with Leo One USA's view that service offerings of NVNG MSS operators can be distinguished by response time of service. Some customer requirements can be accommodated by intermittent service while others can be accommodated only by near real-time services. Orbcomm states in its comments that "[m]any of the anticipated applications for NVNG satellite services will require near full-time availability, including tracking, two-way messaging, and search and rescue operations."[13] FACS concurs when it states, "[f]or Little LEO operators, the ability to offer near real time services, *or even the future potential provision of such services*, is extremely important to the development of many submarkets and their ability to be effectively competitive in those markets."[14] There is no disagreement in the comments that there is a consumer demand for near real-time services.

All the parties recognize that in order for an NVNG MSS service provider to be successful, service must be offered on a global basis. Orbcomm, as the pioneer in this industry, well

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12 Comments of FACS at 8.

13 Comments of Orbcomm at 28. Orbcomm's commitment to providing near real-time services, however, remains unclear. According to the Orbcomm Offering Memorandum, the Orbcomm system will consist of only 28 satellites, not the 36 satellites specified in Orbcomm's license. *Infra* App. A, Orbcomm Offering Memorandum at 1. Leo One USA's analysis of Orbcomm's 28 satellite system, which appears in Appendix B hereto indicates that Orbcomm will be incapable of providing service more than 80% of the time in the continental United States. Thus, consumers will not have access to many near real-time NVNG MSS services from the Orbcomm system. GE Starsys' 24 satellite system is even less capable of providing near real-time services.

14 Comments of FACS at 8-9 (emphasis added).

understands this requirement. It states that the "ability to provide service globally. . . justifies the significant cost of launching a LEO satellite system. Conversely, if a potential LEO satellite system operator was not reasonably confident of its ability to obtain the requisite authority to offer services in multiple countries, that operator would be unlikely to commit the significant resources necessary to design, construct, launch and operate a LEO satellite system."[15] CTA similarly concludes that "Little LEO systems are designed to utilize low-cost technologies that provide global coverage for narrow bandwidth applications such as emergency location services, data collection and vehicle tracking and monitoring."[16] The comments in this proceeding leave little doubt that there is a requirement for new global NVNG MSS services capable of near real-time services.

B. There are Few Substitutes for the Numerous NVNG MSS Applications

Orbcomm, in its comments, provides a list of potential substitutes for its service offerings, including terrestrial service providers, geostationary satellite systems, Big LEO mobile satellite systems and foreign NVNG MSS systems.[17] A close examination of Orbcomm's statements reveals that its analysis, while cleverly drafted, does not accurately reflect how the market will perform or even Orbcomm's stated position on this issue.

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15 Comments of Orbcomm at 48.

16 Comments of CTA at 8.

17 Comments of Orbcomm at 21-27.

1. NVNG MSS Service Providers Will Complement, Not Compete with, Terrestrial Suppliers

Orbcomm, in its comments, states:

> A proper market analysis should also consider all of the terrestrial mobile services that will be competing with ORBCOMM for specific applications. For example, there are numerous wireless alternatives for remote meter reading and asset tracking and monitoring. With respect to messaging and data transfer, various service alternatives presently exist, including one-way paging, two-way paging, narrowband PCS and broadband PCS, SMR and cellular service.[18]

Orbcomm's conclusion, carefully crafted for this proceeding only, contradicts other recent Orbcomm statements on this issue. Specifically, Orbcomm, in its Offering Memorandum, states:

> The ORBCOMM System is not intended to compete with existing and planned terrestrial messaging and data systems. Rather, the Company believes that the ORBCOMM System will complement these systems, which provide low-cost services primarily in metropolitan areas where subscriber densities justify construction of radio towers. Such systems generally do not have sufficient coverage outside metropolitan areas, making them less attractive to vertical markets such as field service operations and trucking, where assets spend large portions of their operating time outside terrestrial system coverage areas. The ORBCOMM System presents an attractive complement to tower-based services because it can provide geographic gap-filler service at affordable costs without the need for additional infrastructure investment.[19]

This is precisely the same conclusion Leo One USA reached in its comments. None of the other commenters disagrees with Orbcomm's conclusion in its Offering Memorandum that Little LEOs

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18 Comments of Orbcomm at 25-26 (footnote omitted).

19 *Infra* App. A, Orbcomm Offering Memorandum at 50. Orbcomm further recognizes that its system has limited application to densely populated areas because its system is unable to penetrate buildings. *Id.* at 20.

will complement, not compete with, terrestrial-based systems. Thus, terrestrial services cannot be considered as substitutes for NVNG MSS services.

2. Neither Geostationary Nor Big LEO Systems are Effective Substitutes for NVNG MSS Service Offerings

Orbcomm contends that "[m]any other operational or planned satellite systems will be capable of offering competing services, on either a regional or global basis. These other satellite systems include global geostationary mobile satellite systems (e.g., Inmarsat), regional mobile satellite systems (e.g., AMSC, OmniTRACS), and the Big LEO satellite systems."[20] Here again, Orbcomm is conveniently crafting its response to address its immediate objectives of swaying the Commission. Orbcomm, in its Offering Memorandum, notes that these systems are designed primarily to provide two-way voice services, which require larger, more complex satellites and a circuit-oriented connection over their networks to transmit even short messages, all of which significantly increase the system's per-message cost for such short messages.[21] Orbcomm notes:

> [t]he cost of the Big LEO systems is significantly greater than those of the ORBCOMM System. Based on filings with the FCC, Iridium anticipates . . . usage charges of approximately $3.00 per minute plus tail charges (land-line extension charges). The total system cost is expected to be approximately $4.7 billion. The Globalstar system is expected to cost approximately $2 billion . . . with usage charges of approximately $.055 per minute. . . .The [Odessey] total system cost is expected to be approximately $2.5 billion.[22]

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20 Comments of Orbcomm at 24.

21 *Infra* App. A, Orbcomm Offering Memorandum at 50.

22 *Id.* at 49-50.

The Orbcomm system is projected to cost $350 million.[23] Additionally, the cost of subscriber equipment for Big LEO and geostationary satellite services is significantly higher than NVNG MSS subscriber equipment. Orbcomm estimates that the price of its subscriber equipment will be $550.[24] The price for Big LEO subscriber equipment is estimated to be approximately $750 - $3,000.[25] Today's price for OmniTRACS subscriber equipment is $3,500 - $3,700 and for AMSC subscriber equipment is $2,500 - $5,000.[26] Orbcomm's own analysis demonstrates that the price for service and subscriber equipment will be significantly lower for the NVNG MSS than for any other satellite-based service. This is precisely the conclusion reached by Leo One USA, CTA and FACS in their comments in this proceeding. For instance, FACS states that "[d]ue to the cost of Big LEO systems (terminals and service rates), their services may not be truly substitutable with Little LEO applications."[27] Likewise, CTA states that "[a]lthough GEO satellites could provide a service alternative for certain Little LEO applications within their fields of coverage, such services would have to be offered at a significantly higher cost, both because of the cost of GEO space segments and the GEO terminal costs."[28]

An analysis of the business arrangements between Big LEO and Little LEO licensees also demonstrates that these services are not substitutes. OmniTRACS, a service provided over

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23 *Id.* at 7.

24 *Id.* at 33.

25 MTA-EMCI, *The U.S. Mobile Data Market: 1995.*

26 *Id.*

27 Comments of FACS at Exh. 1, p. 10.

28 Comments of CTA at 9.

geostationary satellites, has an arrangement to act as a reseller of Orbcomm's services.[29] If OmniTRACS had the ability to provide NVNG MSS services using its own system, there would be no reason for OmniTRACS to procure additional capacity from Orbcomm and thereby incur additional expense. Additionally, it is important to note that Teleglobe is an investor in both Odyssey and Orbcomm. Therefore, the Orbcomm and Odyssey capital structure would clearly constitute a conflict of interest for all three parties if the marketplace viewed the Big and Little LEOs as competitors. The Teleglobe investment in both Orbcomm and Odyssey indicates that Teleglobe and its partners in these ventures do not view these companies as direct competitors.

In its comments, Leo One USA used the DOJ and FTC Merger Guidelines[30] to analyze the competitive implications of the Commission's proposals contained in the Notice. The Guidelines define that each service market is a relevant market when a hypothetical monopolist of the service could raise its price by 5% above the competitive level without losing so many sales to other products or services that the price increase would be unprofitable. In its analysis, Leo One USA posits a 10% price increase as a conservative delineation of the relevant NVNG MSS markets. No commenter has provided any evidence that a geostationary or Big LEO system could offer service at a price of less than 10% higher than the price to be offered by Little LEO suppliers. To the contrary, there is consensus among the commenters that geostationary and Big LEO suppliers would charge for service significantly more than anticipated charges from NVNG MSS suppliers and that the cost of geostationary and Big LEO terminals will be significantly higher than NVNG MSS

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29 *Infra* App. A., Orbcomm Offering Memorandum at 32.

30 Department of Justice and Federal Trade Commission Horizontal Merger Guidelines, 57 Fed. Reg. 41,552 (Apr. 2, 1992) ("Guidelines").

terminal costs. Based on these conclusions, it is difficult to argue that geostationary and Big LEO satellite systems would effectively compete with the NVNG MSS.

3. Foreign NVNG MSS Systems are not a Competitive Factor

Orbcomm argues that the Commission's analysis ignores the presence of foreign-licensed NVNG MSS satellite systems.[31] A close examination of the proposed foreign systems reveals several reasons why they should not be factored into a market analysis. First, none of the systems listed in Orbcomm's comments has sought authority to offer service in the United States. Given the limited amount of spectrum currently allocated for the NVNG MSS and the number of U.S. companies seeking to use that spectrum, it is highly unlikely that foreign systems would be licensed to offer service in the United States in the near future. This view is supported by the Commission's recent proposal in the DISCO II proceeding, where the Commission recognized that:

> in many satellite services, only a limited number of space stations can be authorized to serve the United States because of spectrum or other technical constraints. Consequently, a failure to participate in a processing group, the outcome of which will be to decide which companies will receive licenses, may preclude a non-U.S. system from later serving the United States even if it receives an orbital assignment from another administration.[32]

None of the foreign systems Orbcomm identified is eligible to obtain frequency assignments in the current NVNG MSS processing round. Moreover, it is highly unlikely that there will be any spectrum remaining after this processing round is concluded to accommodate additional entrants.

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31 Comments of Orbcomm at 22.

32 *Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States,* FCC No. 96-210, *Notice of Proposed Rulemaking* at para. 16 (May 14, 1996).

Therefore, even if these systems are implemented, they are not likely to provide an opportunity for domestic users to select an additional supplier of NVNG MSS services.

Second, even if these systems could offer service in the United States, it is still unlikely that they would have any appreciable competitive impact. Several of these systems are not NVNG MSS systems at all; they are meteorological or environmental systems.[33] For instance, the S80/T is a single satellite that carries an experimental VHF transponder for characterizing the radio environment. Temisat is a single Italian micro-satellite that offers data collection and distribution for environmental monitoring and carries instruments to uplink and downlink weather data from the Mediterranean and adjacent areas. The Eyesat is also a single satellite system that primarily relays environmental data and also operates in the amateur service. FASAT BRAVO is a single Chilean micro-satellite that is to be launched in 1997. It is designed to monitor the destruction of the ozone layer above Chile and will conduct educational experiments for Chilean universities. The MLMS is a micro-satellite system developed by Belgium interests for a closed user group in Europe. It will operate in the 387 - 394.5 MHz band, which is not allocated in the U.S. to the NVNG MSS and therefore could not be a competitive alternative for U.S. consumers. The one satellite SAFIR system is designed for pollution and environmental monitoring. Finally, the Ukrainian SITCHI satellite is designed for environmental monitoring, cartography, and gathering information on the condition of vegetation. None of the systems discussed above will be capable of offering true NVNG MSS services, much less near real-time services. Other systems, as Orbcomm recognizes, are merely

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[33] The information on the foreign satellites discussed in this section was obtained from the Appendix 4 and 3 material filed at the ITU on the identified satellites and the Internet Home Page of the University of Surrey at http://www.surrey.ac.uk/ee/cser/uosat/hshp.